CUI INC
a bel group

SERIES: PQS075-S | DESCRIPTION: DC-DC CONVERTER

FEATURES

- 0.75W isolated output
- single regulated output
- high efficiency up to 74%
- continuous short circuit protection
- 1500 Vdc isolation
- EN 62368 approved
- meets UL 62368 standards



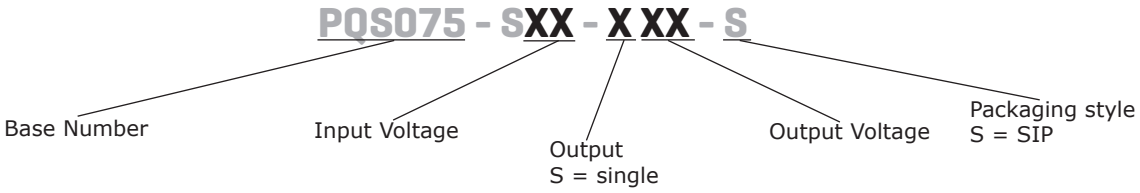
RoHS CE

MODEL

MODEL	input voltage		output voltage	output current		output power	ripple & noise[1]	efficiency
	typ (Vdc)	range (Vdc)	(Vdc)	min (mA)	max (mA)	max (W)	max (mVp-p)	typ (%)
PQS075-S5-S3-S	5	4.75~5.25	3.3	20	200	0.66	75	68
PQS075-S5-S5-S	5	4.75~5.25	5.0	15	150	0.75	75	72
PQS075-S5-S9-S	5	4.75~5.25	9.0	9	83	0.75	75	72
PQS075-S5-S12-S	5	4.75~5.25	12.0	7	62	0.74	75	73
PQS075-S5-S15-S	5	4.75~5.25	15.0	5	50	0.75	75	74
PQS075-S12-S3-S	12	11.4~12.6	3.3	20	200	0.75	100	68
PQS075-S12-S5-S	12	11.4~12.6	5	15	150	0.75	100	72
PQS075-S12-S12-S	12	11.4~12.6	12	7	62	0.75	100	73
PQS075-S12-S15-S	12	11.4~12.6	15	5	50	0.75	150	74
PQS075-S24-S3-S	24	22.8~25.2	3.3	20	200	0.75	100	68
PQS075-S24-S5-S	24	22.8~25.2	5	15	150	0.75	100	72
PQS075-S24-S12-S	24	22.8~25.2	12	7	62	0.75	100	73
PQS075-S24-S15-S	24	22.8~25.2	15	5	50	0.75	150	74

Notes: 1. Ripple and noise are measured at 20 MHz BW by "parallel cable" method.

PART NUMBER KEY



INPUT

parameter	conditions/description		min	typ	max	units
operating input voltage			4.75 11.4 22.8	5.0 12 24	5.25 12.6 25.2	Vdc Vdc Vdc
current	5 Vdc input full load / no load	3.3 Vdc, 5 Vdc output 9 Vdc, 12 Vdc output 15 Vdc output		209/5 208/12 202/18	221/10 221/20 215/30	mA mA mA
	12 Vdc input full load / no load	3.3 Vdc output 5 Vdc output 12 Vdc output 15 Vdc output		92/8 87/8 86/8 85/8	98/- 92/- 91/- 90/-	mA mA mA mA
	24 Vdc input full load / no load	3.3 Vdc output 5 Vdc output 12 Vdc output 15 Vdc output		46/8 44/8 43/8 43/8	51/- 48/- 47/- 46-	mA mA mA mA
filter	capacitance filter					

OUTPUT

parameter	conditions/description	min	typ	max	units
maximum capacitive load	3.3 Vdc output 5 Vdc output 9 Vdc output 12 Vdc output 15 Vdc output			2,400 2,400 1,000 560 560	µF µF µF µF µF
voltage accuracy				±3	%
line regulation				±0.25	%
load regulation	10%~100% load 3.3 Vdc output other outputs			 ±3 ±2	 % %
switching frequency	at full load, nominal input voltage		270		kHz
temperature coefficient	at full load		±0.02		%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
short circuit protection	continuous, auto recovery				

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, for 1 minute with 1 mA max	1,500			Vdc
isolation resistance	input to output at 500 Vdc	1,000			MΩ
isolation capacitance	input to output, 100 kHz / 0.1 V		20		pF
safety approvals	EN/IEC 62368				
EMI/EMC	CISPR32/EN 55032 Class B (see recommended circuit)				
ESD	IEC/EN 61000-4-2 Air ±8kV, Contact ±4kV, perf. Criteria B				
MTBF	as per MIL-HDBK-217F, 25°C	3,500			K hours
RoHS	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-40		85	°C
storage temperature		-55		125	°C
storage humidity	non-condensing	0		95	%
vibration	10-155Hz, 5G, 30 min. along X, Y and Z				

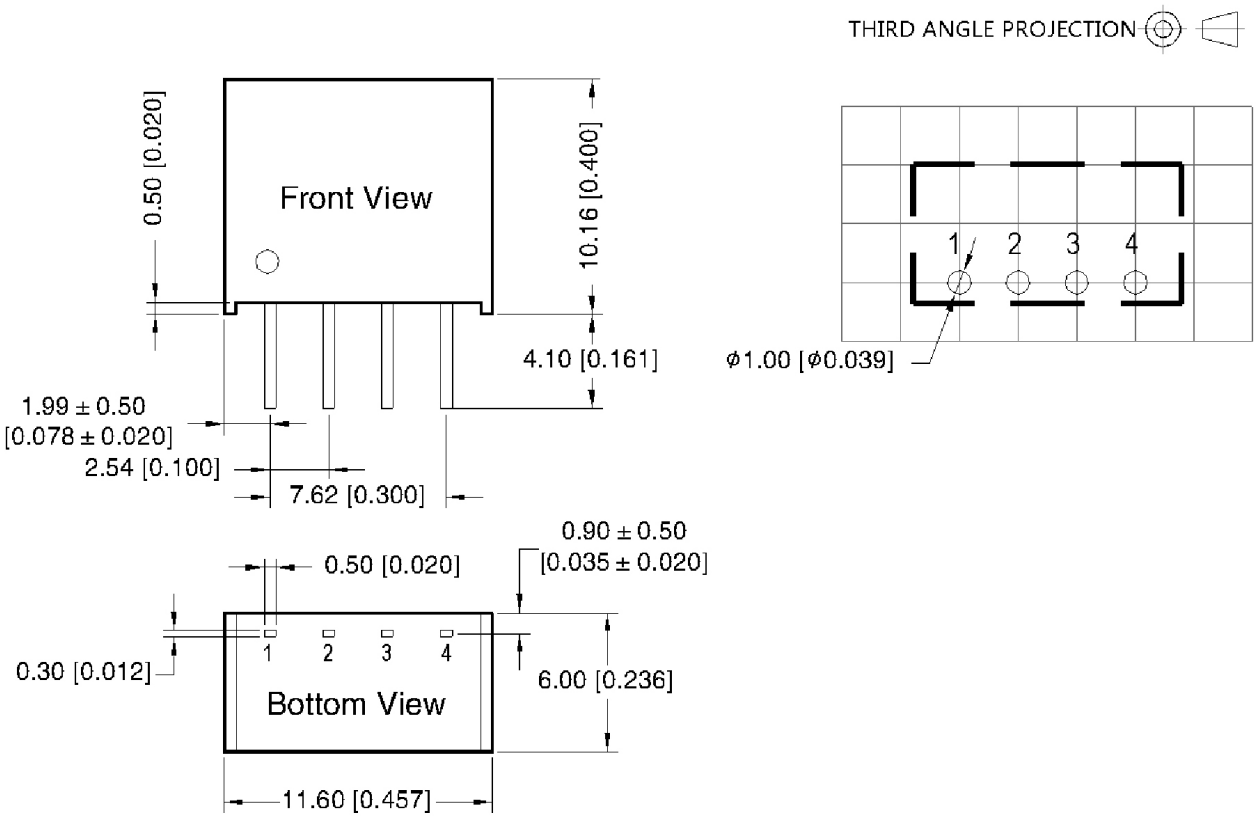
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	11.60 x 6.00 x 10.16 [0.457 x 0.236 x 0.4 inch]				mm
case material	black plastic				
weight			1.3		g

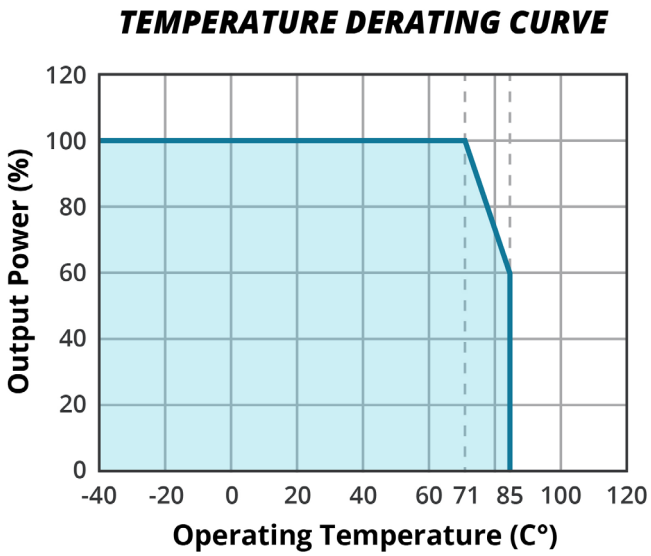
MECHANICAL DRAWING

units: mm [inch]
pin section tolerance: ±0.10[±0.004]
general tolerance: ±0.25[±0.010]

PIN Out	
PIN	Function
1	GND
2	Vin
3	0V
4	+Vo



DERATING CURVES



APPLICATION CIRCUIT

Figure 1

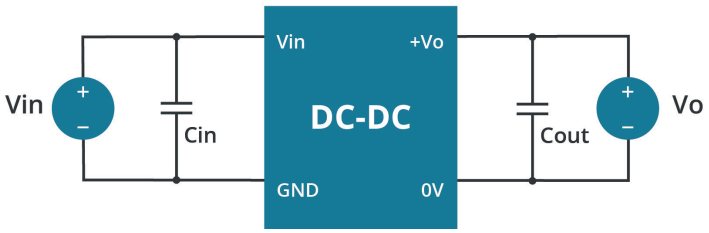


Table 1

Vin (Vdc)	Cin (µF / V)	Vo (Vdc)	Cout (µF / V)
5	4.7µF	3.3/5	10µF
--	--	9/12	2.2
--	--	15	1
12	2.2µF /25	3.3/5	10µF/16V
24	1µF/50V	12	2.2µF/25V
--	--	15	1µF/25V

EMC RECOMMENDED CIRCUIT

Figure 2

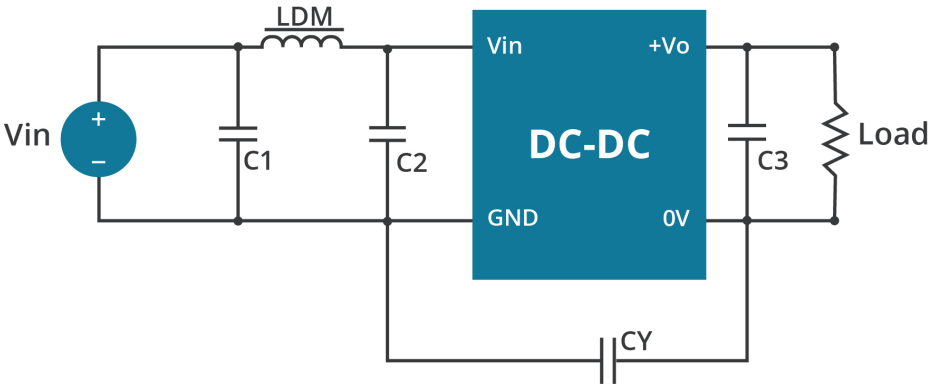


Table 2

Input voltage 5 Vdc	Output voltage (Vdc)		3.3/5/9	12/15
	EMI	C1/C2	4.7µF/25V	
		CY	--	1nF/4KVdc Vishay HGZ10102MBP TDK CD45-E2GA102M-GKA
		C3	Refer to the Cout in table 1	
		LDM	6.8µH	
Input voltage 12, 24 Vdc		C1/C2	4.7µF/50V	
		CY	270pF/2kV	
		C3	Refer to the Cout in table 1	
		LDM	6.8µH	

REVISION HISTORY

rev.	description	date
1.0	initial release	08/17/2020
1.01	mechanical tolerances updated	09/22/2020
1.02	derating curve and circuts updated	06/29/2021
1.03	datasheet updated	09/08/2021

The revision history provided is for informational purposes only and is believed to be accurate.

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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.